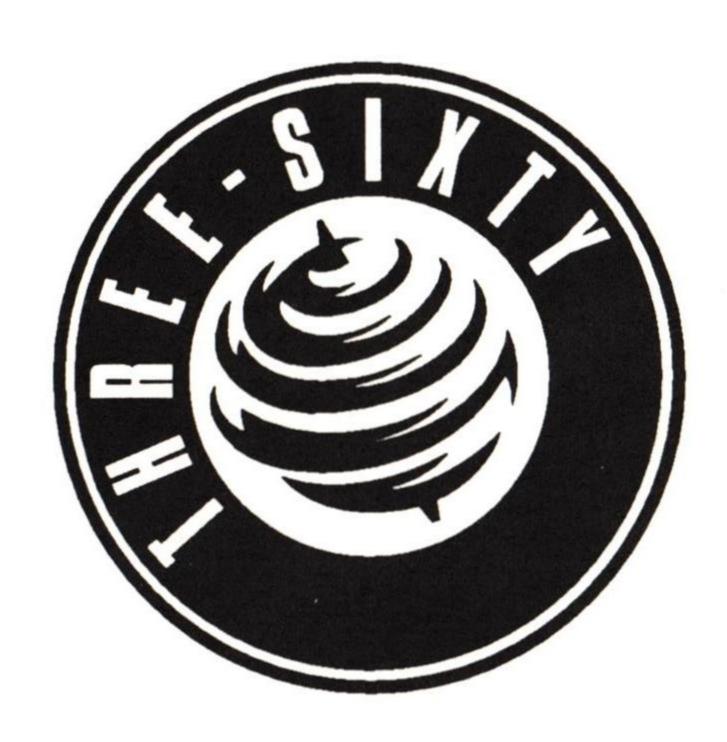# Three-Sixty Pacific's

Trouble Shooting Guide

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Three-Sixty Troubleshooting Guide

This guide is designed to aid you in setting up your computer to maximize the amount of memory available to programs. Many Three-Sixty products are extremely complex programs and require more conventional memory than a "typical" PC system configuration may provide. While a typical IBM computer will have up to two megabytes or more of RAM, not all of this memory is directly available to programs. MS-DOS will normally allow programs to access a maximum of 640K of RAM for executable code, regardless of how much RAM is actually present in the computer.

Obtaining More Memory

If your computer's configuration loads many memory resident programs (also known as TSRs) and/or drivers (for a disk cache, RAM drive, etc.) then it is likely that the remaining unused base memory will not be enough to allow more complex programs to run. It is possible to free up more base memory and allow your computer to use larger programs by optimizing your CONFIG.SYS and AUTOEXEC.BAT files. In addition, setting up your CONFIG.SYS file properly can provide more extended memory and expanded memory which can make some programs run faster and smoother.

If you have a 286, 386, or 486-based PC then you should use MS-DOS 5.0 or later. MS-DOS 5.0 will allow you to load part of DOS plus some TSRs and drivers into upper memory. This will free more base memory for program use. If you have switched to MS-DOS 5.0 and still do not have enough memory to run larger programs, you should check your CONFIG.SYS and AUTOEXEC.BAT files to free more conventional memory.

NOTE: If you are using a memory manager other than the one that came with DOS, please refer to the documentation for that product to determine how to set up your CONFIG.SYS and AUTOEXEC.BAT files for the maximum free base memory.

Modifying CONFIG.SYS

For your CONFIG.SYS file under MS-DOS 5.0:

The first driver loaded in your CONFIG.SYS file should be HIMEM.SYS. The line should look something like:

```
DEVICE=C:\DOS\HIMEM.SYS
```

The HIMEM.SYS file may be in your Windows directory, if you have one.

Ensure that there is a line in your CONFIG.SYS file reading either:

```
DOS=HIGH
```
or
```
DOS=HIGH,UMB
```

This will load DOS into high memory for more free base memory.

If you are using a 386 or 486 computer, install EMM386 by including:

```
DEVICE=C:\DOS\EMM386.EXE 768 RAM
```

in your `CONFIG.SYS` file. (The `EMM386.EXE` file might be in your Windows directory, if you have one.)

Change any lines not mentioned above which read like:

        DEVICE=...

to read:

        DEVICEHIGH=...

If you have a line in your `CONFIG.SYS` file which reads

        BUFFERS= #

(where # is some number), make sure the value for # is less than 50.

If you have a line in your `CONFIG.SYS` file which reads

        FILES= #

(where # is some number) and # is greater than 30, make sure you are using a program which actually requires that number of open files, like word processors or database programs. If you are not using any programs which require a large number of open files, you should replace # with a more reasonable value (like 20 or 30).

Modifying AUTOEXEC.BAT

Make sure you are not loading an excess of memory resident programs. Lines beginning with `SET`, `PATH`, or `PROMPT` do not take up base memory, but any other lines in the `AUTOEXEC.BAT` file might be loading TSRs. If you know what these are and require them to be in memory at all times, try adding the command `LOADHIGH` to the beginning of the line which loads the TSR. If you are using a separate commercial memory manager then consult the documentation for that product to determine how to load TSR programs into high memory.

Make sure you aren't loading any DOS shell or menu program. These take up base memory, and some can also cause problems with larger programs.

Insure you are only loading a mouse driver (if you have a mouse) and are not loading mouse utilities as well. Typically, the mouse driver should be loaded with a single command line, sometimes as

        DEVICEHIGH=MOUSE.SYS

in your `CONFIG.SYS` file, but usually as

        LOADHIGH MOUSE

in your `AUTOEXEC.BAT` file. Many brands of mouse drivers also include TSR utilities for various functions. It is important that these utilities are not loaded. They take up precious base memory and may cause problems similar to those of some DOS shells.

Boot Disk

If you have TSRs or drivers which will not load into high memory or do not wish to change your system configuration for some reason, you can create a boot disk. This will

allow you to run more complex programs by starting up your system from a floppy disk instead of your hard drive. You will still be able to run programs which are located on the hard drive, but the configuration information will be taken from the boot disk and not the hard drive. This provides all the advantages of modifying your CONFIG.SYS and AUTOEXEC.BAT files without having to modify those files on your hard drive.

DOS 5.0

The following instructions assume that your DOS subdirectory is C:\DOS. If your DOS subdirectory is something else, replace all occurrences of C:\DOS in the following instructions with your correct DOS subdirectory. *For DOS 3.0 or 4.0, see page 6.*

To create a boot disk, start by getting a disk of the same type as your "A" drive. For example, if you have a 5.25" high density drive for your "A" drive, get a 5.25" 1.2 MB disk. If you have a 3.5" 720K drive as your "A" drive, get a 3.5" 720K disk. Place this disk in your "A" drive and enter the command:

```
FORMAT A: /S /U
```

When the disk is finished formatting, enter the command:

```
COPY CON A:\CONFIG.SYS
```

You should see a flashing cursor; the system is waiting for you to enter the contents of your new CONFIG.SYS file. Type the following lines:

```
DEVICE=C:\DOS\HIMEM.SYS
DOS=HIGH,UMB
DEVICE=C:\DOS\EMM386.EXE 768 RAM
```

If your system has several megabytes of memory and you are not running a third party disk cache, then you might consider adding the line:

```
DEVICEHIGH=C:\DOS\SMARTDRV.SYS
```

This line adds a disk cache in extended memory which will speed up disk access and make programs which read information from the hard drive run faster. If you do not have several megabytes of extended memory then you should not enter this command.

If the file for your mouse driver is MOUSE.SYS then you should enter the line:

```
DEVICEHIGH=C:\DOS\MOUSE.SYS
```

This assumes that your mouse driver is located in the DOS subdirectory on your hard drive. If the mouse driver is located somewhere else, either copy it to the DOS subdirectory or change "DOS" in above line to reflect the correct subdirectory.

If you are using a real-time software compression driver on your hard drive to increase available storage space, you must add a line to your CONFIG.SYS to install this driver. Three-Sixty does not recommend the use of such a driver as they can cause hard-to-detect problems with some programs. Please consult the documentation for your compression software for the proper command line to enter into your CONFIG.SYS file.

Once you have entered all these lines, press the <F6> key. This will display ^Z on the screen. Now press the <ENTER> key and you should see the message:

```
1 file(s) copied
```

This saves your new CONFIG.SYS file to the disk.

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Once you have created a new CONFIG.SYS file, create a new AUTOEXEC.BAT file for your boot disk. To do this, enter the command:

```
COPY CON A:\AUTOEXEC.BAT
```

You should see a flashing cursor; the system is waiting for you to enter the contents of your new AUTOEXEC.BAT file. Enter the following lines:

```
PROMPT $P$G
PATH C:\;C:\DOS
```

If your mouse driver is MOUSE.COM or some similarly named file (and not MOUSE.SYS, which would have been loaded earlier in the CONFIG.SYS file), then enter the command to load your mouse driver by typing:

```
LOADHIGH C:\DOS\MOUSE.COM
```

If your mouse driver is not named MOUSE.COM, then you need to replace "MOUSE.COM" with the name of your mouse driver. Also, if your mouse driver is not in your DOS subdirectory, you need to replace "DOS" in the command above with name of the directory containing your mouse driver. Alternatively, you can copy the mouse driver to your boot disk and replace the above line with the command:

```
LOADHIGH MOUSE.COM
```

(or whatever the file for the mouse driver is called).

enter the command to activate your VESA driver by typing:

```
LOADHIGH TSENG.COM
```

If the file name of the VESA driver for your video adapter is not TSENG.COM, replace "TSENG.COM" in the above line with the correct file name for your VESA driver.

Once you have entered these lines, Press the <F6> key. This causes ^Z to be displayed. Press the <ENTER>key and you should see the message:

```
1 file(s) copied
```

This saves your new AUTOEXEC.BAT file to the disk. Your boot disk is now complete.

In order to use your new boot disk to increase your system memory, insert the disk into your "A" drive and reset your computer. When your computer has finished booting up, you should see:

```
A>
```

displayed on the screen. You can then switch to your hard drive to run any program with large memory requirements.

If you need assistance in creating a boot disk or reconfiguring your system to provide more memory, you can call the Three-Sixty Customer Support Line at (409) 776-2187 between 9:00 am and 6:00 pm Central Time, Monday through Friday. Please call while sitting at your machine so that we can check your system's configuration for problems. If you cannot call while near your machine, have a complete system description along with copies of your CONFIG.SYS and AUTOEXEC.BAT files so that we can determine what is causing any problems which you may be experiencing.

DOS 3.0 & 4.0

If you are running MS-DOS versions 3 or 4 and do not have enough memory available to run Three-Sixty software, we recommend that you create a boot disk. *Three-Sixty recommends the use of DOS 5.0 or later*. Instructions for DOS 5.0 are on page 4.

Obtain a floppy disk which works in your "A" drive. For example, if you have a 5.25" high-density drive as your "A" drive, get a 5.25" 1.2M high-density disk. If you have a 3.5" high-density drive as your "A" drive, get a 3.5" 1.44M high-density disk. Place this disk in your "A" drive and enter the command:

```
FORMAT A: /S
```

Wait for the disk to finish formatting. If you are using a commercial memory manager and/or the file for your mouse driver is MOUSE.SYS, you must create CONFIG.SYS file which activates them. Enter the following:

```
COPY CON A:\CONFIG.SYS
```

You should see a flashing cursor; the system is waiting for you to enter the contents of you new CONFIG.SYS file. Consult your memory manager documentation if necessary, and enter the appropriate DEVICE= line to activate it.

If the file for your mouse driver is MOUSE.SYS then enter the line:

```
DEVICE=C:\DOS\MOUSE.SYS
```

This assumes that your mouse driver is loaded in the DOS subdirectory of your hard drive. If the mouse driver is located elsewhere, either copy it to the DOS subdirectory or change "DOS" in the above line to reflect the correct subdirectory.

When the last command has been entered, press the <F6> key. This will display ^Z on the screen. Now press the <ENTER> key and you should see the message:

```
1 file(s) copied
```

This saves your new CONFIG.SYS file to the disk.

Once you have completed a new CONFIG.SYS file (if you needed one), create a new AUTOEXEC.BAT file for your boot disk. To do this, enter:

```
COPY CON A:\AUTOEXEC.BAT
```

You should see a flashing cursor as the system waits for you to enter the commands to go into the AUTOEXEC.BAT file. Enter the following line:

```
PROMPT $P$G
PATH C:\;C:\DOS
```

If your mouse driver is MOUSE.COM or MOUSE.EXE (and not MOUSE.SYS, which would have been loaded earlier in the CONFIG.SYS file), then enter the command to load your mouse driver by typing:

```
MOUSE
```

If your mouse driver is not named MOUSE.COM or MOUSE.EXE, then you need to replace "MOUSE" with the correct name of your mouse driver. Also, if your mouse driver is not in your path, either copy it to the DOS directory or to the root directory of your hard drive.

Enter the command to activate your VESA driver by typing:

```
TSENG
```

If the file name of the VESA driver for your video adapter is not TSENG.COM, replace "TSENG" in the above line with the correct file name for your VESA driver.

Once you have entered these lines, press the <F6> key. This should cause ^Z to be displayed. Then press the <ENTER> key and you should see the message:

```
1 file(s) copied
```

This saves your new AUTOEXEC.BAT file to the disk. Your boot disk is complete.

In order to use your new boot disk to increase your system memory, insert the disk into your "A" drive and reset your computer. When the computer is ready you will see:

```
A>
```

displayed on the screen. You can then switch to your hard drive to run programs.

Super VGA and VESA

Many of the newest software programs will run in video modes which offer either higher resolutions or more colors than is supported by the standard VGA graphics resolution. For example, standard VGA supports 320 x 200 with 256 colors or 640 x 480 with 16 colors. Many new Three-Sixty products use Super VGA 640 x 480 with 256 colors.

There is no current hardware standard for such improved graphics modes, so Three-Sixty, along with other leaders in the entertainment software industry, has decided to adopt a software standard instead. This allows our new programs to work on a variety of video adapters from different hardware manufacturers. The software standard is known as the VESA standard, for Video Electronics Standards Association. The VESA concept allows a memory resident driver to be loaded, providing a standard software interface for communicating with different video adapters—each of which supports the same graphics resolutions in different ways. This means that one program can be used with an assortment of different video adapters.

Since there is no current hardware standard, each video adapter may require a unique VESA driver to allow programs to access the various extended VESA graphics modes. Until a hardware standard for Super VGA emerges, the VESA standard is the only practical method for utilizing the greater graphics resolution and larger number of colors available with Super VGA.

For most of its new products, Three-Sixty has decided to use either the 640 x 480 Super VGA mode or the 640 x 400 Super VGA mode. Both modes provide 256 colors. These modes were chosen because a 512K VESA compatible VGA adapter can display these modes on a normal VGA monitor, eliminating the expense of a new monitor for many users and allowing our Super VGA products to appeal to a wider audience. In fact, the 640 x 400 mode works on most (but not all) brands of 256K VGA adapters.

Our installation process will attempt to determine which type of VGA adapter your system uses and load the proper VESA driver. In the unlikely event that your adapter is not recognized, it might be necessary for you to install a VESA driver which is compatible with your system.

If the installation process fails, either your video system is not compatible with the required Super VGA modes or the installation routine was not able to recognize your VGA adapter. If your video adapter is Super VGA-capable, you may still be able to run

programs utilizing Super VGA graphics. To do this, you will have to install a VESA driver manually.

Locating a VESA Driver

If your video adapter came with a utilities disk, you should examine that disk to see if a VESA driver was included. Many video adapters include VESA drivers, and hardware manufacturers typically provide them at little or no charge. If your video adapter did not include a VESA driver, try contacting your hardware dealer or the adapter manufacturer to obtain one.

If you still haven't found the right VESA driver and your video card uses the same chip set as a video card which has a VESA driver, you might be able to use that driver with your card. First, you will need to determine which chip set your video adapter uses.

When some computers first start up, several messages are displayed. The first message (if it appears at all) usually displays the type of VGA adapter installed in the system. If this message is not displayed, you can either contact your hardware dealer to determine what type of video adapter is in your system, or if you feel comfortable with opening your system, you can usually tell what type of video adapter you have by physically examining it. Almost all adapters will have one or more large integrated circuits on the video board which bear a copyright message, often including the name of the chip set manufacturer.

Once you have determined which chip set your video adapter uses, loading the appropriate VESA driver is easy. For example, if you determined that your video adapter uses a Tseng Laboratories ET-4000 chip set, simply run the TSENG.COM program found in the "DRIVERS" subdirectory of the program directory.

Once this VESA driver is loaded into memory, you should be able to run any program which utilizes the enhanced resolution and color of Super VGA—as long as your video adapter and monitor support the required Super VGA modes.

Test your VESA driver and memory configuration by running the CONFIG.EXE utility in the program subdirectory.

If you cannot locate a VESA driver which will work with your system and your video adapter documentation states that Super VGA modes are supported, please call the Three-Sixty Customer Support Line at (409) 776-2187 between 9:00 am and 6:00 pm Central Time, Monday through Friday. When calling, please have all program disks and documentation nearby, as well as any software and documentation which you may have for your video adapter.

Glossary of Terms

Driver   Software which allows use of a hardware device. Often called a device driver.

EMS   Extended Memory, the faster of the uppper memory access protocols.

RAM   (Random Access Memory) Amount of storage available to programs running on your computer.

TSR   Terminate and Stay Resident software. Used primarily to provide additional functionality to DOS or provide support for hardware. Drivers are often TSRs.

VESA   Video Electronics Standards Association standard for Super VGA access.

XMS   Expanded Memory, the slower of the upper memory protocols available.